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EXAMINER

LE, MICHAEL

ART UNIT	PAPER NUMBER
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2163

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/733,750

Applicant(s)

FORMAN ET AL.

Examiner

Michael Le

Art Unit

2163

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-15,17-21 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-15,17-21 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Summary and Status of Claims

1. This Office Action is in response to Applicant's reply filed December 29, 2006.
2. Claims 3, 16 and 22 are cancelled.
3. Claims 1, 2, 4-15, 17-21 and 23 are pending.
4. Claims 2 and 14 is rejected under 35 U.S.C. 112, second paragraph.
5. Claims 1, 2, 4, 5, 7, 8, 15, 17-19, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haimowitz et al. (US Patent 5,819,291) of record, in view of Commons et al. (US Patent Pub 2002/0069195) of record.
6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haimowitz et al. (US Patent 5,819,291) of record, in view of Commons et al. (US Patent Pub 2002/0069195) of record, further in view of Mori et al. (US Patent 5,806,058) of record.
7. Claims 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haimowitz et al. (US Patent 5,819,291) of record, in view of Commons et al. (US Patent Pub 2002/0069195) of record, further in view of Kuga et al. (US Patent 5,276,616) of record.
8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haimowitz et al. (US Patent 5,819,291) of record, in view of Commons et al. (US Patent Pub 2002/0069195) of record, further in view of Vagnozzi (US Patent 6,070,164) of record.
9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

10. **Claims 2 and 14 are rejected under 35 U.S.C. 112, second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. **Claim 2** recites “at least one of the clean data records includes a most accurate key record of a plurality of said key records associated with the at least one clean data record” in lines 1-3. It is unclear whether the most accurate key record is included in the clean data record or if it is only associated with the at least one clean data record. For the prior art rejections below, it will be interpreted as only being associated with the at least one clean data record.

12. **Claim 14** recites “reaching the predetermined phase of cleaning with no match, generating a new indexing record for said associated clean data file” in lines 2-3. Claim 14 contradicts the method of claim 9 because generating a new indexing record for an associated clean data file only occurs when there is a near match. Claim 14 claims the step being performed when there is no match. Appropriate correction is required. It is unclear how the claim should be interpreted, therefore it will be interpreted as it was rejected in the prior Office Action.

13. The prior art rejections to claims 2 and 14 below are made as best understood in light of the rejection under 35 U.S.C. 112, second paragraph addressed above.

Claim Rejections - 35 USC § 103

14. **Claims 1, 2, 4, 5, 7, 8, 15, 17-19, 21 and 23 are rejected under 35 U.S.C. 103(a)** as being unpatentable over Haimowitz et al. (US Patent 5,819,291) of record, hereinafter

“Haimowitz”, in view of Commons et al. (US Patent Pub 2002/0069195) of record, hereinafter “Commons”.

15. In regards to **claim 1**, Haimowitz discloses a heuristics analysis tool embodied in a computer-readable storage medium, comprising:

- a. a persistent table, having clean data records and key records wherein at least one key record is associated with each clean data record, each key record having at least one field of data from the associated clean data record (Col. 2, lines 63-66; col. 4, lines 65-67; col. 5, lines 1-8)¹; and
- b. heuristic-based routines to match newly received data records to the key records in the persistent table (Col. 3, lines 37-40).

16. Haimowitz does not expressly disclose iteratively cleaning the newly received data records by modifying the newly received data records in response to no match occurring between the received data records and the key records in the persistent table.

17. Commons discloses an iterative process for finding a matching database record (Commons: para. 0058, lines 1-3). Commons further discloses using a search key that is matched against records that are stored in the database (Commons: para. 0058, lines 4-6, 10-11). If a match is not found on the first try, the search is repeated (matching is repeated) with progressively less specific information (iteratively cleaned) (Commons: para. 0060, lines 1-3). This process is repeated until a match is found or it is determined that no matching records exist (Commons: Figs. 3A, 3B; para. 0060-63).

¹ The candidate records (key record) are associated with the existing records (clean data records) in the database.

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18. Haimowitz and Commons are analogous art because they are directed to the same field of endeavor of data storage and retrieval.

19. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the tool of Haimowitz by adding the feature of iteratively cleaning the newly received data records by modifying the newly received data records in response to no match occurring between the received data records and the key records in the persistent table, as taught by Commons.

20. The motivation for doing so would have been because iteratively cleaning the input data and performing a matching process to retrieve data is fast and accurate process for retrieving data (Commons: para. 0058, lines 1-3). Furthermore, since the process is iterative, manual intervention following a failed matching step is no longer required and thus provides convenience and speed.

21. In regards to **claim 2**, Haimowitz discloses wherein at least one of the clean data records includes a most accurate key record of a plurality of said key records associated with the at least one clean data record (Haimowitz: col. 5, lines 27-34).

22. In regards to **claim 4**, Haimowitz discloses wherein each said clean data record is a completely clean data file (Haimowitz: Col. 3, lines 61-67; col. 4, lines 1-61).

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23. In regards to **claim 5**, Haimowitz discloses the tool as set forth in claim 1 further comprising: at least one column recording one or more of said heuristic-based routines that were involved in generating each of said key records (Col. 5, lines 1-4, 50-67; col. 6, lines 6-10)².

24. In regards to **claims 7 and 8**, Haimowitz discloses special flags associated with said key records, said flags are a quality factor assigned to each said key record (col. 5, lines 31-34).

25. In regards to **claim 23**, Haimowitz discloses a method of doing business comprising:

- a. storing a database of clean data files for each of a plurality of entities (Col. 2, lines 62-66);
- b. creating a tabulation of crude keys, each having a pointer to an associated one of said clean data files (Col. 3, lines 34-47; col. 4, lines 65-67; col. 5, lines 1-8)³;
- c. receiving a dirty data record related to at least one entity of said plurality of entities (Col. 3, lines 32-33)⁴;
- d. comparing said dirty data record to said tabulation (Col. 3, lines 37-40; col. 6, lines 11-18)⁵;
- e. assigning said dirty data record to one of said clean data files if a match is found based on the comparing (Col. 6, lines 20-21)⁶; and
- f. comparing the dirty data record to said tabulation (Col. 6, lines 11-22).

² The hash key field is interpreted as heuristic based routines because they are functions used to generate candidates (key records).

³ The candidate set is interpreted as a tabulation of crude keys. Each of the candidates is related to an existing entry in the database. This is interpreted as having a pointer to a clean data file.

⁴ A new record is received is interpreted as receiving a dirty record related to at least one entity of said plurality of entities.

⁵ Matching (comparing) between the new record (dirty data) and each of the candidates (tabulation) is performed.

⁶ If a match is found the new record (dirty data) is used to update (assigned) the existing record (clean data file) associated with the matched candidate.

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26. Haimowitz does not expressly disclose cleaning the dirty data record by modifying the dirty data record in response to determining that no match is present based on the comparing.

27. Commons discloses an iterative process for finding a matching database record (Commons: para. 0058, lines 1-3). Commons further discloses using a search key that is matched against records that are stored in the database (Commons: para. 0058, lines 4-6, 10-11). If a match is not found on the first try, the search is repeated (matching is repeated) with progressively less specific information (iteratively cleaned) (Commons: para. 0060, lines 1-3). This process is repeated until a match is found or it is determined that no matching records exist (Commons: Figs. 3A, 3B; para. 0060-63).

28. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the method of Haimowitz by adding the feature of cleaning the dirty data record by modifying the dirty data record in response to determining that no match is present based on the comparing.

29. The motivation for doing so would have been because iteratively cleaning the input data and performing a matching process to retrieve data is fast and accurate process for retrieving data (Commons: para. 0058, lines 1-3).

30. In regards to **claim 15**, Haimowitz discloses a computer memory (Col. 2, lines 61-63) comprising:

- a. computer code means for receiving an input data record (Haimowitz: Col. 3, lines 32-33);

- b. computer code means for comparing said input data record to a tabular format set of crude keys (Haimowitz: Col. 3, lines 37-40);
- c. computer code means for returning a clean key associated with one of said crude keys upon a comparing match (Haimowitz: col. 6, lines 18-20)⁷;
- d. computer code means for creating a new crude key from said input data record such that said new crude key is added to the set of crude keys (Haimowitz: col. 6, lines 19-20; col. 9, lines 58-64).

31. Haimowitz does not expressly disclose computer code means for iterative cleaning of said input data record upon a no-match return and storing the iteratively-generated respective cleaned input data record therefrom, computer code means for re-comparing said iteratively-generated respective cleaned input data record to said set of crude keys, and computer code means for creating a new crude key from a last said iteratively-generated respective cleaned input data record.

32. Commons discloses an iterative process for finding a matching database record (Commons: para. 0058, lines 1-3). Commons further discloses using a search key that is matched against records that are stored in the database (Commons: para. 0058, lines 4-6, 10-11). If a match is not found on the first try, the search is repeated (matching is repeated) with progressively less specific information (iteratively cleaned) (Commons: para. 0060, lines 1-3). This process is repeated until a match is found or it is determined that no matching records exist (Commons: Figs. 3A, 3B; para. 0060-63).

⁷ When a match is found, the existing record (clean key) associated with the matched candidate (crude key) is accessed (returning).

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33. Haimowitz and Commons are analogous art because they are directed to the same field of endeavor of data storage and retrieval.

34. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the computer memory of Haimowitz by adding computer code means for iterative cleaning of said input data record upon a no-match return and storing the iteratively-generated respective cleaned input data record therefrom, computer code means for re-comparing said iteratively-generated respective cleaned input data record to said set of crude keys, and computer code means for creating a new crude key from a last said iteratively-generated respective cleaned input data record, as taught by Commons.

35. The motivation for doing so would have been because iteratively cleaning the input data and performing a matching process to retrieve data is fast and accurate process for retrieving data (Commons: para. 0058, lines 1-3). Furthermore, since the process is iterative, manual intervention following a failed matching step is no longer required and thus provides convenience and speed.

36. In regards to **claim 17**, Haimowitz discloses the computer memory as set forth in claim 15 wherein said computer code means for generating a new crude key has heuristic routines (Haimowitz: Col. 5, lines 1-4, 50-67; col. 6, lines 6-10)⁸.

37. In regards to **claim 18**, Haimowitz discloses the computer memory as set forth in claim 17 further comprising: computer code means for displaying in said tabular format said crude keys and heuristic routines (Haimowitz: Col. 10, lines 4-18).

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38. In regards to **claim 19**, Haimowitz discloses the computer memory as set forth in claim 15 wherein each of said crude keys has an associated pointer to obtain said associated clean key (Col. 4, lines 65-67; col. 5, lines 1-8)⁹.

39. In regards to **claim 21**, Haimowitz discloses the computer memory as set forth in claim 15 wherein said tabular format is a displayable table, further comprising: computer code means including heuristic routines for editing said table (Haimowitz: col. 9, lines 30-41).

40. **Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haimowitz et al. (US Patent 5,819,291) of record, hereinafter "Haimowitz", in view of Commons et al. (US Patent Pub 2002/0069195) of record, hereinafter "Commons", further in view of Mori et al. (US Patent 5,806,058) of record, hereinafter "Mori".**

41. In regards to **claim 6**, Haimowitz and Commons do not expressly disclose a time-stamp associated with each said key record in the table wherein said time-stamp is indicative of most recent use.

42. Mori discloses an index record (key record) having a time access (time-stamp) field that indicates the time the index record was most recently used (Mori: col. 3, lines 45-47).

43. Haimowitz, Commons and Mori are analogous art because they are directed to the same field of endeavor of database management with indices.

44. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the combined tool of Haimowitz and Commons by adding a time-stamp associated

⁸ The hash key field is interpreted as heuristic based routines because they are functions used to generate candidates (key records).

⁹ Each of the candidates (crude keys) generated are associated with an existing record (clean key) in the database.

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with each said key record in the table wherein said time-stamp is indicative of most recent use, as taught by Mori.

45. The motivation for doing so would have been because a timestamp indicating the most recent use of the index key would be useful in determining what indices are no longer useful and could potentially be deleted. An index that has not been accessed for a long time is most likely no longer useful and can be deleted to conserve space and increase the efficiency and speed of the database system (Mori: col. 1, lines 40-47, 59-62).

46. **Claims 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haimowitz et al. (US Patent 5,819,291) of record, hereinafter "Haimowitz" in view of Commons et al. (US Patent Pub 2002/0069195) of record, hereinafter "Commons", further in view of Kuga et al. (US Patent 5,276,616) of record, hereinafter "Kuga".**

47. In regards to **claim 9**, Haimowitz discloses a data association and cleaning method comprising:

- a. storing a plurality of clean data files and, associated with each of said clean data files, at least one indexing record; each said indexing record containing at least one field related to a respective associated clean data file such that said at least one indexing record serves as a pointer to the respective associated said clean data file (Haimowitz: Col. 2, lines 62-66; col. 3, lines 35-37; col. 4, lines 65-67; col. 5, lines 1-8)¹⁰;

¹⁰ A database of existing records is stored (clean data files). Associated with the existing records are candidates (indexing record). The candidate set is related to the associated existing record and serves as a method of accessing the clean data file (pointer to respective associated clean data file).

- b. comparing an input data record to the indexing records for obtaining a match, and if the match occurs, assigning said input data record to the respective associated said clean data file (Haimowitz: col. 3, lines 31-43; col. 6, lines 11-21)¹¹; and
- c. upon no match, adding said cleaned input data record as a new clean data file with an associated indexing record therefor (Haimowitz: col. 6, lines 18-21)¹².

48. Haimowitz does not expressly disclose if the match does not occur, iteratively cleaning the input data record until at least a near-match between said cleaned input data record and at least one of the indexing records is obtained and assigning said cleaned input data record to the one of said clean data files associated with the near-matched indexing record and upon a near match, adding said cleaned input data record as a new indexing record for the associated one of said clean data files.

49. Commons discloses an iterative process for finding a matching database record (Commons: para. 0058, lines 1-3). Commons further discloses using a search key that is matched against records that are stored in the database (Commons: para. 0058, lines 4-6, 10-11). If a match is not found on the first try, the search is repeated (matching is repeated) with progressively less specific information (iteratively cleaned) (Commons: para. 0060, lines 1-3). This process is repeated until a match is found or it is determined that no matching records exist (Commons: Figs. 3A, 3B; para. 0060-63).

50. Kuga discloses an apparatus for generating an index from input data (Kuga: col. 5, lines 9-11). A matching module matches input data to an existing entry in a dictionary (database) to

¹¹ An input data record is matched with each of the candidates (indexing record) to obtain a match. If a match is obtained then the input data record is used to update (assigned) the associated existing record in the database (clean data file) associated with the matched candidate (indexing record).

¹² If no match is found the input data is inserted into the database (adding input data record as a new clean data file).

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determine a match. When there is a substantial match or an exact match, an index entry is generated and associated with the existing entry (Kuga: col. 13, lines 26-45).

51. Haimowitz, Commons and Kuga are analogous art because they are directed to the same field of endeavor of data storage and retrieval.

52. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the method of Haimowitz by adding the steps of iteratively cleaning the input data record until at least a near-match between said cleaned input data record and at least one of the indexing records is obtained and assigning said cleaned input data record to the one of said clean data files associated with a near-matched indexing record upon no match, as taught by Commons and adding said cleaned input data record as a new indexing record for the associated one of said clean data files upon obtaining a match, as taught by Kuga.

53. The motivation for doing so would have been because iteratively cleaning the input data and performing a matching process to retrieve data is fast and accurate process for retrieving data (Commons: para. 0058, lines 1-3). Furthermore, since the process is iterative, manual intervention following a failed matching step is no longer required and thus provides convenience and speed. The motivation for creating an indexing record upon a match would have been because manual index creation is burdensome and inconsistent (Kuga: col. 1, lines 47-68).

54. In regards to **claim 10**, Haimowitz discloses the method as set forth in claim 9 wherein said storing is in a displayable format (Haimowitz: Fig. 5).

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55. In regards to **claim 11**, Haimowitz discloses the method as set forth in claim 10 further comprising: at given intervals, performing a data clean-up on a stored table in said displayable format (Haimowitz: Fig. 5; col. 9, lines 30-32; col. 10, lines 4-6, 9-18)¹³.

56. In regards to **claim 12**, Haimowitz discloses the method as set forth in claim 9 wherein upon said adding said cleaned input data record as a new clean data file with an associated indexing record therefor, flagging said new clean data file (Haimowitz: col. 9, lines 58-64)¹⁴.

57. **Claim 13** was addressed above in the rejection to claim 9 as being disclosed by Haimowitz and Commons. Haimowitz and Commons disclose said iteratively cleaning (Commons: para. 0058, lines 1-3) further comprising:

- a. cleaning said input data record and storing a first cleaned input data record (Commons: para. 0060, lines 1-3);
- b. comparing the first cleaned input data record to said indexing records (Commons: para. 0060, lines 1-3), and
 - i. upon recognizing a match therebetween, stopping said comparing, and retrieving the associated clean data file for association with said first cleaned input data record (Commons: Figs. 3A, 3B; para. 0060-63),
 - ii. upon not recognizing a match therebetween, re-cleaning said first cleaned input data record, discarding said first cleaned input data record, and storing it as a subsequently cleaned input data record; (Commons: Figs. 3A, 3B; para. 0060-63)

¹³ An administrator can add additional rules and choose indices at given intervals using the graphical user interface shown in figure 5 (displayable format).

¹⁴ The new customer ID generated for the new record is interpreted as flagging the new entry (new clean data file).

- c. re-comparing the subsequently cleaned input data set to said indexing records (Commons: Figs. 3A, 3B; para. 0060-63); and
- d. iteratively repeating said re-cleaning and re-comparing until a predetermined phase of cleaning is reached and no said match therebetween is determined (Commons: Figs. 3A, 3B; para. 0060-63), and storing the most recent re-cleaned and re-compared input data record as a new clean data file (Haimowitz: col. 6, lines 18-21).

58. In regards to **claim 14**, Haimowitz discloses the method as set forth in claim 13 wherein upon reaching the predetermined phase of cleaning with no match, generating a new indexing record for said new clean data file (Haimowitz: col. 9, lines 58-64).

59. **Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haimowitz et al. (US Patent 5,819,291) of record, hereinafter "Haimowitz" in view of Commons et al. (US Patent Pub 2002/0069195) of record, hereinafter "Commons", further in view of Vagnozzi (US Patent 6,070,164) of record.**

60. In regards to **claim 20**, Haimowitz, Commons and Kuga do not expressly disclose each of said crude keys points to a cleanest one of a plurality of crude keys associated with a clean data file.

61. Vagnozzi discloses data values stored in a database that are associated with fine keys (cleanest key), which are in turn associated with one or more coarse keys (crude keys) (Vagnozzi: col. 3, lines 23-45).

62. Haimowitz, Commons, Kuga and Vangozzi are analogous art because they are directed to the same field of endeavor of database systems using indices.

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63. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the combined computer memory of Haimowitz, Commons and Kuga by making each of said crude keys points to a cleanest one of a plurality of crude keys associated with a clean data file, as taught by Vagnozzi.

64. The motivation for doing so would have been because it allows for fast query responses by minimizing the number of key indices required (Vagnozzi: col. 2, lines 65-67; col. 3, lines 1-17, 21-23).

Response to Amendment

Drawings

65. Applicant's amendment to the drawings to address inconsistent reference characters is acknowledged. Consequently, objection to the drawings is withdrawn.

Specification

66. Applicant's amendment to the title and Specification is acknowledged. The abstract was amended to remove legal phraseology, however, the implied language still remains. Specifically, "Mechanisms for automated revision of the indexing table are described." The language of the abstract should be clear and concise and should avoid phrases that can be implied.

Consequently, objection to the specification is maintained.

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Objection to claims 6, 13, and 15 for Minor Informalities

67. Applicant's amendment to claims 6, 13 and 15 to address the minor informalities is acknowledged. Consequently, the objection to claims 6, 13 and 15 is withdrawn.

Rejection of Claims 2-4 and 22 under 35 U.S.C 112, First Paragraph

68. Claims 3 and 22 are cancelled rendering the rejections to them moot.

69. Applicant's amendment to claims 2 and 4 is acknowledged. The rejection to claims 2 and 4 under 35 U.S.C. 112, second paragraph is withdrawn.

Rejection of Claims 1-14, 16-18 and 21-23 under 35 U.S.C 112, Second Paragraph

70. Claims 3, 16 and 22 are cancelled rendering the rejection to them moot.

71. Applicant's amendment to claims 1, 2, 4-14, 17, 18, 21 and 23 is acknowledged. The rejection to claims 1, 2, 4-13, 17, 18, 21 and 23 under 35 U.S.C. 112, second paragraph is withdrawn. The amendments to claim 14 created new issues of under 35 U.S.C. 112, second paragraph as described in the rejection above.

Rejection of Claims 1-8 under 35 U.S.C 101

72. Claim 3 is cancelled rendering the rejection to it moot.

73. Applicant's amendment to claims 1, 2 and 4-8 is acknowledged. Consequently, the rejection to claims 1, 2 and 4-8 under 35 U.S.C. 101 is withdrawn.

Response to Arguments

Rejection of claims 1, 5, 7, 8 and 23 under 35 U.S.C. 102(b)

74. Applicant's arguments in regards to the rejections to claims 1, 5, 7, 8 and 23 under 35 U.S.C. 102(b), have been fully considered but they are moot in view of the new grounds of rejection set forth above as necessitated by Applicant's amendment. Applicant's amendment to claim 1 adds a limitation found in the other independent claims, which were rejected under 35 U.S.C. 103(a). Accordingly, the arguments with respect to the other independent claims are addressed below. The new grounds of rejection using the prior art of record are also explained below.

Rejection of claims 9-14 under 35 U.S.C. 103(a)

75. Applicant's arguments in regards to the rejections to claims 9-14 under 35 U.S.C. 103(a), have been fully considered but they are not persuasive. Applicant alleges that the Examiner failed to establish a prima facie case of obviousness because there was no motivation to combine the references and the references fail to disclose all the limitations of the claim (Pages 17-18 of the Remarks). The Examiner respectfully disagrees.

76. First, addressing the argument that the references fail to disclose all the limitations of the claim (specifically claim 9), Applicant correctly notes the use of Commons et al. (US Patent Pub 2002/0069195) hereinafter "Commons", and Kuga et al. (US Patent 5,276,616) hereinafter "Kuga" to make up for the deficiencies of primary reference Haimowitz et al. (US Patent 5,819,291) hereinafter "Haimowitz". Applicant alleges that Commons fails to disclose iteratively cleaning an input data record when a match does not occur. Commons discloses an

iterative process for finding a matching database record (Commons: para. 0058, lines 1-3).

Commons further discloses using a search key that is matched against records that are stored in the database (Commons: para. 0058, lines 4-6, 10-11). If a match is not found on the first try, the search is repeated (matching is repeated) with progressively less specific information (iteratively cleaned) (Commons: para. 0060, lines 1-3). This process is repeated until a match is found or it is determined that no matching records exist (Commons: Figs. 3A, 3B; para. 0060-63).

Applicant alleges that Commons's progressive reduction in specificity of information is different from the "cleaning" of the claim, reasoning that cleaning implies that some modification occurs, "such as to remove white space, illegal characters and so forth." (Page 18 of the Remarks)

However, these features are not in the language of the claim. The claim simply recites "cleaning the input data record until at least a near-match" in lines 9-10 of claim 9. The claims are read in light of the specification, but the specification is not read into the language of the claims.

Accordingly, "cleaning" is given its broadest reasonable interpretation, which in this case is interpreted as reducing the information of an input record. Thus, Commons discloses the first element as of Haimowitz's deficiencies.

77. Kuga was relied upon for the disclosure of the second element of Haimowitz's deficiencies. Applicant alleges that Kuga has no suggestion of adding a cleaned input data record as a new indexing record for the associated one of clean data files." (Page 19 of the Remarks) Contrary to Applicant's allegation, Kuga indeed suggests cleaning of an input data record. Kuga discloses generating an inflexion or variant of the entry (input data record) to provide a result (cleaned input data record) for further matching. Kuga then discloses if the inflexed or variation of the entry is matched, it is added as an index and stored (Kuga: col. 13,

lines 26-45). Thus, Kuga discloses adding a cleaned input data record as a new indexing record for an associated one of the clean data files upon occurrence of a near match. As explained above, the combination of Haimowitz, Commons and Kuga discloses all the limitations of the claim.

78. Lastly, addressing Applicant's argument that there is no motivation to combine, it is clear from the explanation above that there is a motivation. All the cited references disclose searching a database with a given entry. Commons and Kuga perform this method of searching with additional features that give the method of searching in Haimowitz benefits of speed and convenience. Therefore, the Examiner has met the burden of establishing a prima facie case of obviousness. Consequently, the rejection to claims 9-14 under 35 U.S.C. 103(a) is maintained.

Rejection of claims 15, 18, 19 and 21 under 35 U.S.C. 103(a)

79. Applicant's arguments in regards to the rejections to claims 15, 18, 19 and 21 under 35 U.S.C. 103(a), have been fully considered but they are not persuasive. Applicant's arguments are based on the arguments set forth in regards to claim 9, which have been addressed above. Consequently, the rejection to claims 15, 18, 19 and 21 under 35 U.S.C. 103(a) is maintained.

Rejection of dependent claims under 35 U.S.C. 103(a)

80. Claims 16 is cancelled rendering the rejection to it moot.

81. Applicant's arguments are based on the arguments set forth in regards to the independent claims, which have been addressed above. Consequently, the rejection of all dependent claims under 35 U.S.C. 103(a) is maintained.

Conclusion

82. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

83. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

84. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Le whose telephone number is 571-272-7970. The examiner can normally be reached on Mon-Thurs : 9:30am-6pm, Fri: 8am-4:30pm.

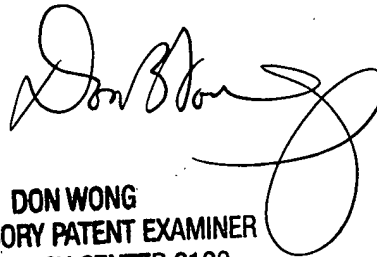
85. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

86. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Le
Art Unit 2163
March 24, 2007

A handwritten signature in black ink, appearing to read "Don Wong", with a large, stylized loop at the end.

DON WONG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100